Hydraulic Specialist in **Motion & Control**

**Hydraulic Components**
for Construction Equipments & General Industrial Machinery

Doosan Corporation
Mottrol
Beyond 40 years history, Doosan corporation Mottrol will open a new future as a global components manufacturer

Since the advancement to the unexplored hydraulic industry of Korea in 1974, Doosan Corporation Mottrol has established the full line-up of key hydraulic components including travelling motors, swing motors, main pumps and main control valves for heavy construction equipment.

Doosan Corporation Mottrol, as the No.1 hydraulic components manufacturer in Korea, has not only localized key hydraulic components, but has also led the development of the global hydraulic industry.

Doosan Corporation Mottrol is now on a par with other global leaders as the excellent performance and quality of the products have been widely demonstrated to all of the world.

Based on our accumulated know-how, innovative technology development, and quality improvement activities, Doosan Corporation Mottrol has established DMJC, Doosan Mottrol Jiangyin, to localize production base in China in response to a rapidly changing global components market.

To realize our aspiration to become “a leading global components manufacturer,” Doosan Corporation Mottrol is committed to securing leading technology and supplying excellent components through continued R&D investment.

We are there for our customers.

We listen carefully to the voices of our customers and position ourselves as reliable partners by flexibly coping with the needs of our customers.

1) Customized support : Set the satisfaction of customer’s needs and value as the top priority and provide customized services.

2) Rapid Response : With flexible and quick response in rapidly changing market, become a leading global components manufacturer.

3) Full Line up for Hydraulic components : Provide the best value and convenience to our customers equipped with a key hydraulic components production systems.

4) Partnership with Global Construction Equipment Makers : Became a Global Top Construction Equipment Makers’ long-trusted partner, based on honesty and transparency.
Vision and Mission
Doosan Corporation Mottrol aims to serve innovative hydraulic technology and service in order to increase customer’s business value through continued creative innovation based on the technology in hydraulic components and systems accumulated for over 40 years.

Company History

1975 ~ 1989  
Establishment  
Doosan Corporation Mottrol entered the unexplored hydraulic industry in 1975 and wrote a history of Korean hydraulic industry as a front-runner.
- 1974  Established Tongmyung Industries Inc.
- 1986  Established Tongmyung Heavy Industries R&D Center

1990 ~ 2000  
Expansion and Transformation  
Doosan Corporation Mottrol grew as a professional hydraulic components manufacturer with the production of hydraulic components for excavators.
- 1990  Began manufacturing hydraulic motors for excavators, swing motors and hydraulic pumps
- 1996  Obtained ISO 9001 Quality System Certificate (hydraulic devices and systems)

2001 ~ 2007  
Technological Independence and Growth  
Doosan Corporation Mottrol strengthened the trust of customers by developing unique hydraulic components with its in-house technology.
- 2001  Received “2000 Outstanding Technology Development Award” from Hydraulic Industrial Institute of Japan
- 2006  Traveling devices for excavators were designated as the “World Class Product” by MOTIE

2008 ~ 2013  
Present New Take-off  
Doosan Corporation Mottrol established stable management structure as a new member of Doosan group in 2008. And DMJC was established to secure global competitiveness.
- 2010  Changed the company name to Doosan Corporation Mottrol
- 2011  Established DMJC, a Chinese subsidiary in Jiangyin
- 2013  Obtained Productivity Management System Certificate
Piston Pump DPA Series

Developed in 2001, the low-noise and high efficient DPA Series swash plate pumps offer a ground for environment-friendly design.

Features
1) Compact Design
   - The total length of DPA series is 30% shorter than T5V series pump's
2) Hydraulic Regulator
   - Power Control, Power shift control, Negative & positive control
3) Low Noise
   - Apply PCU (Pressure Control Unit) device to minimize pressure pulsation
   - Improve the shiftness of main casing to reduce sound level
4) High Reliability
   - Apply copper alloy between swash plate and support
   - Apply mono type casing to reduce the possibility of external leakage
   - Improve the strength of rotary parts

Applications
- Excavators
- Crawler cranes
- Crawler drill

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. Displacement</th>
<th>Rated Pressure</th>
<th>Max Pressure</th>
<th>Max. Speed for self priming</th>
<th>Max. Input Torque</th>
<th>Application</th>
<th>Remarks</th>
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Dimensions

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Flange mounting face for delivery port

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Flange mounting face for suction port

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<tbody>
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<td>DPA140</td>
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Dimensions of shaft end

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<td>JS D3001</td>
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</tr>
</tbody>
</table>

*For the purpose of improving products, possible to make design changes without notice.
Piston Pump DPA-V Series

To respond various customer requirements, DPA-V Series provide a high power density and diverse control devices including electric regulator.

Features
1) High Power Density
   - Reduce pump weight and size through structure optimization
2) Electric Regulator
   - Provide electric regulator with stable controllability for electric control system
3) Low Noise
   - Optimize valve plate to minimize pressure pulsation
   - Reduce sound level at high frequency region to improve sound quality
4) High Efficiency & Long Life
   - Shoe and swash plate bearing to decrease leakage loss
   - Improve tensile strength of shoe material

Applications
- Excavators
- Crawler cranes
- Crawler drill

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. Displacement</th>
<th>Rated Pressure</th>
<th>Max. Pressure</th>
<th>Max. Speed for self priming</th>
<th>Max. input torque</th>
<th>Application</th>
<th>Remark</th>
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Dimensions

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<td>DPA140V</td>
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<td>144</td>
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Flange mounting face for delivery port

<table>
<thead>
<tr>
<th>Model</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>D</th>
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<tbody>
<tr>
<td>DPA117V</td>
<td>27.8</td>
<td>57.2</td>
<td>25</td>
<td>M12-22</td>
</tr>
<tr>
<td>DPA140V</td>
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<td>57.2</td>
<td>25</td>
<td>M12-22</td>
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</table>

Flange mounting face for suction port

<table>
<thead>
<tr>
<th>Model</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPA117V</td>
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<td>88.9</td>
<td>60</td>
<td>M12-16</td>
</tr>
<tr>
<td>DPA140V</td>
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<td>75</td>
<td>M16-20</td>
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Dimensions of shaft end

<table>
<thead>
<tr>
<th>Model</th>
<th>No. of teeth</th>
<th>Pitch circle dia.</th>
<th>Pressure angle</th>
<th>Module</th>
<th>Rule</th>
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<tbody>
<tr>
<td>DPA117V</td>
<td>14</td>
<td>35.0</td>
<td>20°</td>
<td>2.5</td>
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<tr>
<td>DPA140V</td>
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<td>20°</td>
<td>2.5</td>
<td>JIS D2001</td>
</tr>
</tbody>
</table>

*For the purpose of improving products, possible to make design changes without notice.
Piston Pump T5V Series

**Features**
1. High durability with high strength bearing and anti-wear design
2. Low pulsation technology implemented in stable Rotary Parts design
3. Applicable to various heavy equipments in combination with various control methods (flow control, power control, power shift control, electronic control)
4. Various attachments are available with optional high pressure gear pump

**Applications**
- Excavators
- Crawler cranes
- Crawler drill

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. Displacement</th>
<th>Rated Pressure</th>
<th>Max Pressure</th>
<th>Max. Speed for self priming</th>
<th>Max. input torque</th>
<th>Application</th>
<th>Weight</th>
</tr>
</thead>
</table>
| T5V63 | 43.2 cc | 350 kgf/cm² | 34.3 MPa | 360 kgf.cm | 190 rpm | 1,120 N·m | 12-14 T
| T5V80 | 80 cc | 350 kgf/cm² | 34.3 MPa | 360 kgf.cm | 190 rpm | 1,120 N·m | 12-14 T
| T5V112 | 117 cc | 350 kgf/cm² | 34.3 MPa | 360 kgf.cm | 190 rpm | 1,120 N·m | 12-14 T
| T5V140 | 140 cc | 350 kgf/cm² | 34.3 MPa | 360 kgf.cm | 190 rpm | 1,120 N·m | 12-14 T

**Discharge Flange**

<table>
<thead>
<tr>
<th>Model</th>
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<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
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<tr>
<td>T5V63</td>
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<td>31</td>
<td>M10-16</td>
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<tr>
<td>T5V80</td>
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<td>50.8</td>
<td>19</td>
<td>31</td>
<td>M10-16</td>
</tr>
<tr>
<td>T5V112</td>
<td>27.8</td>
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<td>T5V140</td>
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**Suction Flange**

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<tbody>
<tr>
<td>T5V63</td>
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<td>88.9</td>
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<td>T5V80</td>
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<td>T5V112</td>
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**Dimensions of shaft end**

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<td>T5V112</td>
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<td>25°</td>
<td>2.5</td>
<td>JIS D2001</td>
</tr>
</tbody>
</table>

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*For the purpose of improving products, possible to make design changes without notice.*
The DPS27, which is a duplex swash plate pump, provides superior work performance with its compact size and high efficiency.

Features
1) Excellent durability achieved by high strength bearing and anti-wear design
2) Compact size achieved by single block structure design
3) Low impulse technology implemented in stable Rotary Parts design

Applications
- Excavators
- Crawler cranes
- Crawler drill

Hydraulic Circuit Model Information

DPS27   |   X   |   X   |   X   |   X   |   X   |   X   |   X

Option 1: Power control type
- O: Power control
- W: Wide power control

Design code
- 1: Crawler type
- 2: Wheel type

Specifications

<table>
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<tr>
<th>Model</th>
<th>Max. Displacement</th>
<th>Pressure (MPa)</th>
<th>Max. Input Speed</th>
<th>Max. Input Torque</th>
<th>Hydraulic Fluid</th>
<th>Weight</th>
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<td>27.5 ± 2</td>
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<td>172</td>
<td>≤20 ~ +95°C</td>
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<td>P3 Gear pump</td>
<td>16.2/18.2</td>
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<td>24.5</td>
<td>2,700</td>
<td>172</td>
<td>≤20 ~ +95°C</td>
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<td>P4 Gear pump</td>
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<td>3.7</td>
<td>6.3</td>
<td>2,700</td>
<td>172</td>
<td>≤20 ~ +95°C</td>
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Dimensions

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Dimensions of shaft end

Model | d | L16 | L18 | L19 | L20 | O-ring |
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<td>69.9</td>
<td>≤20</td>
<td>M 12-18</td>
<td>37.5</td>
<td></td>
</tr>
</tbody>
</table>

For the purpose of improving products, possible to make design changes without notice.
Piston Pump DPS27 with Proportional control

To save energy in hydraulic systems, DPS27 series provide a wider power shift function by using EPPR valve.

Features
1) Double pump with one cylinder block
2) Compact design
3) Power shift control by using EPPR valve

Applications
- Excavators
- Crawler cranes
- Crawler drill

Hydraulic Circuit

Model Information

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max Displacement</th>
<th>Pressure/WPN</th>
<th>Max. input Speed</th>
<th>Max. input torque</th>
<th>Input current range</th>
<th>Hydraulic Fluid</th>
<th>Weight</th>
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<tbody>
<tr>
<td>P1, P2 P4</td>
<td>27.5/27.5</td>
<td>25.5</td>
<td>27.4</td>
<td>2,700/ 172</td>
<td>-20 ~ +75°C</td>
<td>10 ~ 1,000 cSt</td>
<td>40</td>
</tr>
<tr>
<td>P3 Gear pump</td>
<td>16/18.2</td>
<td>21.5</td>
<td>26.5</td>
<td>2,700</td>
<td>-20 ~ +75°C</td>
<td>10 ~ 1,000 cSt</td>
<td>60</td>
</tr>
<tr>
<td>P4 Gear pump</td>
<td>5/6.5</td>
<td>3.9</td>
<td>6.3</td>
<td>2,700</td>
<td>-20 ~ +75°C</td>
<td>10 ~ 1,000 cSt</td>
<td>60</td>
</tr>
</tbody>
</table>

Dimensions of shaft end

<table>
<thead>
<tr>
<th>Model</th>
<th>No. of teeth</th>
<th>Pressure angle</th>
<th>Module</th>
<th>Major diameter</th>
<th>Minor diameter</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPS27</td>
<td>13</td>
<td>30°</td>
<td>16/32</td>
<td>ø21.8mm</td>
<td>ø18.63mm</td>
<td>SAE</td>
</tr>
</tbody>
</table>

Flange mounting face for suction port

<table>
<thead>
<tr>
<th>Model</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>L16</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPS27</td>
<td>37.5</td>
<td>67.9</td>
<td>12-18</td>
<td>177.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions of shaft end

<table>
<thead>
<tr>
<th>Port size</th>
<th>g</th>
<th>h</th>
<th>L18</th>
<th>L20</th>
<th>L25</th>
<th>L30</th>
<th>O-ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>PF 3/4</td>
<td>ø20</td>
<td>ø20</td>
<td>ø71.8</td>
<td>2-5</td>
<td>10</td>
<td>20</td>
<td>ø20</td>
</tr>
<tr>
<td>PF 1 1/4</td>
<td>ø20</td>
<td>ø20</td>
<td>ø116.6</td>
<td>2-5</td>
<td>19</td>
<td>15</td>
<td>ø11</td>
</tr>
<tr>
<td>PF 1 1/2</td>
<td>ø20</td>
<td>ø20</td>
<td>ø116.6</td>
<td>1.5</td>
<td>2.5</td>
<td>15</td>
<td>ø11</td>
</tr>
</tbody>
</table>

*For the purpose of improving products, possible to make design changes without notice.
Doosan Corporation Mottrol’s TM and DM series, 2-speed travel motors with a built-in reduction gear, provide powerful output torque, excellent controllability and high reliability.

### Features
1. Powerful travel motor with best performance
2. Applied with new technologies, high functionality, compact design
   - Built-in automatic 2-speed function
   - Built-in hydraulic brake
   - Built-in shockless function at start/stop
   - Anti-Cavitations function embedded
3. Minimized maintenance advanced design with minimized parts greatly reduces maintenance requirements
4. High reliability and advanced technology full response to diversified customers’ requirements

### Applications
- Excavators
- Crawler cranes
- Crawler drill
- Crusher
- Screen

---

**Hydraulic Circuit**

- **Doosan Corporation Mottrol**
- **Piston Motor**
  - **TM / DM Series**
    - **Specifications**
      - **Model Information**
        - **Doosan Corporation Mottrol**
        - **Piston Motor**
          - **TM / DM Series**
            - **Model**
              - **Series**
                - **Reduction Gear**
                  - **Output Torque**
                    - **Output Speed**
                      - **Maximum Pressure**
                        - **Brake Torque**
                          - **Application**
                - **Displacement**
                  - **Revision**

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*For the purpose of improving products, possible to make design changes without notice.*

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**Dimensions**

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16
Piston Motor SD / HS(TSM) Series

The SD and HS(TSM) series that incorporate various functions (high-pressure relief valve, Anti cavitation valve, Anti reaction valve etc.) ensure high performance and fatigueless operation.

Features
1) Powerful swing device with best performance
2) Implemented with new technologies and compact design
- Relief valve embedded with Anti shock function
- Built-in mechanical time delay valve
- Anti cavitation function applied (Make up valve)
- Anti reaction valve installed (reduces reverse swing of the swing body to enable smoother stop)

Applications
➊ SD Series : SD(Swing Device) / HS Series : HS(Hydraulic Swing motor)
➋ SD Series : Max. output torque code / HS Series : Typical Displacement
➌ Symbol of major design change
➍ SD Series : Motor size (Typical Displacement) / HS Series : Rated Displacement
➎ Rated Pressure
➏ Hydraulic circuit code
➐ Time delay valve
➑ Anti reaction valve code

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>SD / HS</th>
<th>160</th>
<th>128</th>
<th>270</th>
<th>160/270</th>
<th>CH</th>
<th>B</th>
<th>IRV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear Ratio</td>
<td>Swing Torque</td>
<td>Theoretical Output Torque</td>
<td>Max. Speed</td>
<td>Theoretical Input Torque</td>
<td>Output Speed</td>
<td>Max. Speed</td>
<td>Displacement</td>
<td>Brake Torque</td>
</tr>
<tr>
<td>SD025(TSM32-RG250)</td>
<td>16.7</td>
<td>199.0</td>
<td>ø223</td>
<td>ø203</td>
<td>15</td>
<td>20.5</td>
<td>72</td>
<td>108.5</td>
</tr>
<tr>
<td>SD040(TSM65-RG400)</td>
<td>16.7</td>
<td>220.0</td>
<td>ø235</td>
<td>ø210</td>
<td>15</td>
<td>20.5</td>
<td>66</td>
<td>102.5</td>
</tr>
<tr>
<td>SD070(TSM110-RG700)</td>
<td>17.0</td>
<td>282.0</td>
<td>ø260</td>
<td>ø240</td>
<td>19</td>
<td>25.0</td>
<td>96</td>
<td>168.0</td>
</tr>
<tr>
<td>SD160(TSM160-RG1600)</td>
<td>31.5</td>
<td>301.5</td>
<td>ø307</td>
<td>ø282</td>
<td>20.5</td>
<td>34.5</td>
<td>117</td>
<td>168.5</td>
</tr>
<tr>
<td>SD200(TSM190-RG2000)</td>
<td>19.0</td>
<td>306.0</td>
<td>ø382</td>
<td>ø344</td>
<td>20</td>
<td>28.0</td>
<td>137</td>
<td>168.5</td>
</tr>
<tr>
<td>SD240(TSM260-RG2400)</td>
<td>57.5</td>
<td>344.0</td>
<td>ø183</td>
<td>ø162</td>
<td>18</td>
<td>39.5</td>
<td>157</td>
<td>185.5</td>
</tr>
</tbody>
</table>

Dimensions

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>SD / HS</th>
<th>160</th>
<th>128</th>
<th>270</th>
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<tr>
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<td>102.5</td>
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<td>SD070(TSM110-RG700)</td>
<td>17.0</td>
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<td>ø240</td>
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<td>25.0</td>
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<tr>
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<td>185.5</td>
</tr>
</tbody>
</table>

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Hydraulic Circuit

MCV controls the flow route of the hydraulic oil from pump in order to operate the actuators such as the travel motor, swing motor, or cylinders. 2-Block Type MCV meets diversified customers’ requirements with excellent controllability and extendibility.

Features
1) 2-Block Type MCV
2) Adopted Overload Relief Valve with built-in Make-up function
3) Variable arm regen valve built-in (High excavation power)
4) Bucket joining valve built-in (Fast bucket speed)
5) Selection of swing priority in movements of boom or swing

Applications
- Excavators

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Development Target</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV270</td>
<td>Pressure 36.3 MPa @ 10 lpm</td>
<td>● ● Max 36.3 MPa</td>
</tr>
<tr>
<td></td>
<td>Flow 290lpm x 2</td>
<td>● ●</td>
</tr>
<tr>
<td>ORV</td>
<td>Front 36.3 MPa @ 20 lpm</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>OPT 36.3 MPa @ 20 lpm</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>SW-BM Priority Valve</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>SW-AM Priority Valve</td>
<td>- ●</td>
</tr>
<tr>
<td></td>
<td>BM+AM Priority Valve</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>BM+BTK Stroke Limiter</td>
<td>- ●</td>
</tr>
<tr>
<td></td>
<td>Travel + Front Travel Straight</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>Front 35.3 MPa @ 20 lpm</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>OPT 24.5 MPa @ 20 lpm</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>BM Interna(BM1+BM2)</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>AM Interna(A1+AM2)</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>BM/AM Spool Internal Type</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>BMK Spool Internal Type</td>
<td>- ●</td>
</tr>
<tr>
<td></td>
<td>Arm Regen Valve</td>
<td>① External Pressure Type</td>
</tr>
<tr>
<td></td>
<td>② Internal Pressure Type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Holding Valve</td>
<td>BM Internal type</td>
</tr>
<tr>
<td></td>
<td>AM Internal type</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>ORV BS 10,000</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>BKT BS 10,000</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>AM Operation BS 10,000</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>MRV BS 10,000</td>
<td>● ●</td>
</tr>
<tr>
<td></td>
<td>MRV BS 10,000</td>
<td>● ●</td>
</tr>
</tbody>
</table>

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Model Information

MV 270 - NC 34 T D 22

1. MV Series : Mottrol Valve
2. Rated Flow
3. System Type: NC(Negative control)/PC(Positive control)
4. Rated Pressure
5. Block Type : 1(2 Two block type)
6. Customer initials
7. Ton of Excavator : 21~30ton

Dimensions

For the purpose of improving products, possible to make design changes without notice.
Application

- DPA Series
- DPA-V Series
- T5V Series
- DPS27
- DPS27 with Proportional control
- TM / DM Series
- SD / HS(TSM) Series
- Main Control Valve

Doosan Corporation Mottrol

Hydraulic Components for Construction Equipments & General Industrial Machinery
R&D Overview

R&D Overview

R&D Center are developing new analysis and design technologies jointly with domestic and overseas research institutes. The test laboratory provides test environments as similar as those of the real excavator operation to guarantee the quality and reliability of simulation. More than 10 kinds of quality tests are performed in 1,300m² area R&D Room.

Core Technology

Doosan Corporation Mottrol’s R&D spurs the development of new technology for next-generation hydraulic system by adopting optimization techniques for element parts and structure interpretation.

- Optimized Design of Elementary Parts
  - Optimum Force Balance Analysis/D
  - Design for important sliding parts
  - Wear resistance of major parts

- Optimization by Structural Analysis
  - Structure and MFBD analysis
  - Form optimization, strength, and durability projection technology

- Optimized Regulator Design Technology
  - Regulator structure design technology
  - Improvement of control precision and hysteresis characteristics

- Flow and Solidification Analysis of Casting material
  - Study of defects and mechanical properties through casting simulations

- Low Pulsation Design
  - Pressure pulsation measurement/analysis
  - Optimization of valve plate

- Flow Analysis
  - Flow/pressure loss and cavitation analysis
  - Self-priming ability improvement

- Optimization of Structural Analysis
  - Form optimization, strength, and durability projection technology

Research & Development Overview | Manufacturing Overview | DMJC

Manufacturing Overview

As a Global Top Maker, Doosan Corporation Mottrol introduce MES (Manufacturing Execution System) which makes possible to secure perfect Manufacturing quality and maximize production efficiency. Through the MES system, to ensure quality, efficiency of overall operating value chain by CMMS which is continued maintaining for the best condition of operating facilities in order to meet customer’s demand. And Doosan Corporation Mottrol leads building Smart Factory in overall manufacturing process based on Industry 4.0 strategy of Doosan Group.

As a core system to ensure quality assurance and waste elimination, which should be the picture of any manufacturing plant, MES has been adopted. This will provide the foundation to achieve & scientific way of work, which we seek achieve under Doosan Way.

Achieving Real-Time Quality & Production Record of All Process Through MES

- Machining
  - Automatic product order and Record gathering for each machine
  - Synchronizing machining operating based on production plan
- Assembly
  - Zero-defect process control
  - Work instruction display
- Performance
  - Performance result analysis by SPC
- Cost
  - Statistical process control and analysis(Cpk)
  - Systematic tool life cycle control
- Quality
  - Systematic tool life cycle control
- Process Cost
  - Statistical process control and analysis(Cpk)
  - Systematic tool life cycle control
- Total Production Efficiency
  - Improvement of work efficiency
- Performance Test pass rate
  - Improving performance test pass rate
- Lead time
  - Shortening the product lead time
Doosan Mottrol Jiangyin Co., Ltd., an overseas subsidiary in China, is establishing its presence based on the accumulated technology and the world-class production system to secure the competitiveness.

**History**
- 2011. 06. 10 Obtained the business license
- 2011. 07. 23 Groundbreaking ceremony
- 2011. 12. 31 Completion of the plant
- 2012. 02. 13 Trial production
- 2012. 03. 10 Started mass production
- 2012. 07. 03 Building dedication ceremony

**Quality System Establishment**
- Eliminate lot defects
  - Establish TPS (Toyota Production System) line
  - Compliant with operation standards
  - 100% synchronization with operation standards
- Be aware of cleanliness
  - Bare hand operation during the assembly
- Eliminate human errors
  - Introduction of poka-yokes system
  - Secured working environment
  - Install clean rooms in all processes
- Establish prompt response system for customers
  - Resolve customer complaints
- Establish and apply an operation for CS improvement in China

**Process System Advancement**
- Washing line
  - Tunnel type continuous washing (ultrasonic / high pressure)
- Assembly line
  - Establish TPS (Toyota Production System) line
- Performance line
  - Performance test automation
- Coating line
  - Line coating system / automatic color dispenser

**Product Capacity**
- DMJC \textbf{84,000} (Unit/Year)

**Vision and Goals**

**Goal of MOTTROL in China**
- Local maker market share increasing
- Top-tier maker of hydraulic components for construction equipments in China market

**Major Initiatives**
- Cost Competitiveness
  - Expand Local Sourcing
- Quality Competitiveness
  - Improve quality of processes, outsourcing & parts
  - Build Response System for Quality Issues
- Productivity Competitiveness
  - Shorten lead time and achieve Tact Time
  - Build lean operation system with minimized WIP (work-in-process) stock
- Upgraded Customer Service
  - Conduct Customer Service
  - Provide A/S training
  - Shorten delivery time

**Build a Global Top-tier Operational Excellence Site**

**Mottrol’s Global Front Manufacturing Base**

**Secure cost competitiveness by local sourcing**

**Product/supply hydraulic products as an OEM →**

**Product for emerging China market**

**Develop China and global market →**

**For export and overseas production**

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**Doosan Corporation Mottrol | Manufacturing Overview | DMJC**
As a global leading comprehensive components manufacturer, Doosan Corporation Mottrol values customer satisfaction.